

In the Claims:

On page 44, cancel line 1, and substitute the following left-hand justified heading therefor:

A2 CLAIMS

5 Please cancel claims 1-15, without prejudice, and substitute the following claims therefor:

16. A picture processing apparatus, comprising:
a light receiving portion for generating an electric signal corresponding to an intensity of
a received light;
10 an amplifying portion for amplifying the electric signal generated by the light receiving
portion;
a plurality of storing portions, wherein each of the storing portions stores, as a current
signal, the electric signal amplified by the amplifying portion;
15 a load portion for converting the current signal stored by each of the storing portions into
a voltage signal;
a bias portion for supplying an offset current to an input of the load portion;
a calculating portion for calculating an output signal of the load portion based on the
voltage signal converted by the load portion; and
20 an outputting portion for outputting a calculated result of the calculating portion.

17. The picture processing apparatus as claimed in claim 16, wherein the plurality
of storing portions store current signals corresponding to the intensity of light received in
different time periods, and wherein the calculating portion performs a calculating process using
voltage signals from at least two different time periods based on current signals extracted from at
25 least two of the plurality of storing portions.

18. The picture processing apparatus as claimed in claim 17, wherein the
calculating process comprises at least one of addition, subtraction, and comparison.

30 19. The picture processing apparatus as claimed in claim 16, wherein the
amplifying portion comprises a first mirror transistor and a second mirror transistor connected

such that a gate electrode of the first mirror transistor faces a gate electrode of the second transistor, thereby amplifying the current signal based on current mirror amplification.

20. The picture processing apparatus as claimed in claim 16, wherein each of the
5 storing portions includes a current copier circuit for storing the current signal.

21. The picture processing apparatus as claimed in claim 16, wherein the bias
portion supplies an offset current to one of two current signals being compared by the calculating
portion, the two current signals being supplied by two of the plurality of storage portions.

10 22. A plurality of pixels operable within a photographing device, the pixels
arranged on a circuit in a matrix, for detecting a brightness of an object, each of the pixels
comprising:

15 a light receiving portion for generating an electric signal corresponding to an intensity of
a received light;

20 an amplifying portion for amplifying the electric signal generated by the light receiving
portion;

25 a plurality of storing portions, wherein each of the storing portions stores, as a current
signal, the electric signal amplified by the amplifying portion;

a load portion for converting the current signal stored by each of the storing portions into
a voltage signal;

a bias portion for supplying an offset current to an input of the load portion;

a calculating portion for calculating an output signal of the load portion based on the
voltage signal converted by the load portion; and

30 an outputting portion for outputting a calculated result of the calculating portion.

23. The plurality of pixels as claimed in claim 22, wherein the plurality of storing
portions store current signals corresponding to the intensity of light received in different time
periods, and wherein the calculating portion performs a calculating process using voltage signals
30 from at least two different time periods based on current signals extracted from at least two of
the plurality of storing portions.

24. The plurality of pixels as claimed in claim 23, wherein the calculating process comprises at least one of addition, subtraction, and comparison.

25. The plurality of pixels as claimed in claim 22, wherein the amplifying portion comprises a first mirror transistor and a second mirror transistor connected such that a gate electrode of the first mirror transistor faces a gate electrode of the second transistor, thereby amplifying the current signal based on current mirror amplification.

26. The plurality of pixels as claimed in claim 22, wherein each of the storing portions includes a current copier circuit for storing the current signal.

27. The plurality of pixels as claimed in claim 22, wherein the bias portion supplies an offset current to one of two current signals being compared by the calculating portion, the two current signals being supplied by two of the plurality of storage portions.

28. A photographing device for detecting a brightness of an object, comprising:
a pixel area in which pixels are arranged in a matrix, each pixel comprising a light receiving portion for generating an electric signal corresponding to an intensity of a received light and an amplifying portion for amplifying the electric signal generated by the light receiving portion;

a second amplifying area in which second amplifying portions are arranged in each column of the matrix of the pixels in the pixel area, wherein each of the second amplifying portions amplifies a current signal based on current mirror amplification by a first mirror transistor and a second mirror transistor connected such that a gate electrode of the first mirror transistor faces a gate electrode of the second mirror transistor;

a pixel-outside storing area in which a plurality of storing portions are arranged in a matrix corresponding to the arrangement of the pixels in the pixel area, wherein each of the storing portions stores, as a current signal, the electric signal that has been amplified;

a load portion and calculating portion area in which a plurality of load portions and a plurality of calculating portions are arranged in each column of the matrix of the pixels of the

pixel area, wherein each of the load portions converts the current signal of the corresponding storing portion into a voltage signal, and wherein each of the calculating portions performs a calculating process; and

an outputting portion area in which a plurality of outputting portions are arranged in each column of the matrix of the pixels of the pixel area, wherein each of the outputting portions outputs a calculated result of the corresponding calculating portion;

wherein the pixel area, the second amplifying portion area, the pixel-outside storing area, the load portion and calculating portion area, and the outputting portion area are disposed on a circuit.

29. The photographing device as claimed in claim 28, wherein the plurality of storing portions store current signals corresponding to the received light in different periods, and wherein the calculating portion performs a calculating process using voltage signals based on current signals extracted from at least two of the plurality of storing portions.

30. The picture processing apparatus as claimed in claim 29, wherein the calculating process comprises at least one of addition, subtraction, and comparison.

31. The photographing device as claimed in claim 28, further comprising a bias portion for adding an offset current to the current signal stored by each of the storing portions.

32. The photographing device as claimed in claim 31, wherein the bias portion supplies an offset current to one of two current signals being compared by the calculating portion, the two current signals being supplied by two of the plurality of storage portions.

33. The photographing device as claimed in claim 28, wherein each of the storing portions includes a current copier circuit for storing the current signal.